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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,424	08/01/2008	Sheshakamal H. Jayaram	26656-1	8640

76656 7590 04/04/2011

Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MO 63105

EXAMINER

PHASGE, ARUN S

ART UNIT	PAPER NUMBER
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1724

NOTIFICATION DATE	DELIVERY MODE
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04/04/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Office Action Summary	Application No. 10/599,424	Applicant(s) JAYARAM ET AL.	
	Examiner Arun S. Phasge	Art Unit 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 15-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 28-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/22/06, 8/16/10</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I in the reply filed on 1/28/11 is acknowledged. The traversal is on the ground(s) that the single technical feature shown in the Qin patent would not produce the biconcave treatment zone, since the arrangement disclosed in figure 11 would produce a cylindrical treatment zone. This is not found persuasive because when the entire Qin patent is considered, the limitation to the two electrodes having opposing convex electrode surfaces without the spacer used in figure 11 would form the claimed biconcave treatment zone (see figure 2).

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Qin et al. (Qin), U.S. Patent 5,662,031.

The Qin patent discloses a device for treating a fluid comprising at least two electrodes for generating an electric field there between, the electrodes having convex electrode surface sections configured such that when assembled in a housing, the convex electrode surface section opposing each other defining there between a biconcave treatment zone for treatment of the fluid and one of the electrodes is configured such that the fluid will circumfuse its surface in order to be introduced into the treatment zone (see figure 2 and col. 5, lines 30-55).

The device of Qin further discloses the housing including a fluid inlet for receiving fluid to be treated and a fluid outlet for allowing treated fluid to be retrieved (see figure 2).

The Qin patent further discloses a fluid treatment chamber for use in the inactivation of microorganisms in fluids, the fluid treatment chamber comprising an electrode assembly having at least two electrodes, the electrodes having opposing convex electrode surface sections forming an electrode gap consisting of a biconcave treatment zone the results of using the device are given little or no patentable weight absent a structural limitation.

The Board of Patent Appeals and Interferences in *Ex Parte Masham*, 2 USPQ 2d 1647 (1987) stated, "a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claimed." The device "does not undergo a metamorphosis to a new apparatus merely by affixing instructions thereto on the use."

Accordingly, the claims are rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qin applied as above in view of Sayre, U.S. Patent 3,691,050.

The Qin patent further discloses that the electrodes are coaxial with one inner electrode and the other an outer electrode (see figure 2). The patent further discloses the primary treatment zone between the inlet and the outlet and located in the midsection (see figure 2).

The patent fails to disclose the modification to the shape of the electrodes to form the facing convex electrode surfaces, i.e., the use of spherical or ellipsoidal shapes. Such modification to shape has been well settled to have been within the purview of the ordinary artisan.

Accordingly, such a limitation would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the shape of of the electrodes disclosed in the Qin patent, because such modification to shape has been well settled to have been within the skill of the ordinary artisan unless the modification produces an unexpected result.

The Qin patent fails to disclose the feeding of the solution under the influence of gravity. The Sayre patent is cited to show that such a modification is within the skill of the ordinary artisan. The patent states that the preferred feeding of the solution to the cell is by a pumping system and valve, "however, it will become apparent that a gravity fed system may be accommodated with variations in water flow and pressure" (see col. 2, lines 54-61).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Qin by the teachings of Sayre.

One having ordinary skill in the art would have been motivated to do this modification, because the Sayre patent teaches the modification to feed the cell using gravity is an obvious modification to the use of pumps and valves used by Qin.

Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qin in view of Sayre as applied to claims above, and further in view of White, U.S. Patent 2,192,249.

The Qin patent is further silent on the overflow feeding of the fluid to the treatment zone and the results of using the convex surface shaped electrodes.

As stated above, the results obtained by the use of the electrodes would have been inherent to the use of the shaped electrodes and/or are given little or no patentable weight in an apparatus claim.

The White patent teaches the use of the overflow feeding as claimed to produce a continuous smooth film for the treatment zone (see page 6, col. 1, lines 1-52).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Qin by the teachings of White.

One having ordinary skill in the art would have been motivated to do this modification, because the White patent teaches the modification to the flow of the fluid into the treatment zone to produce a smooth continuous film.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (571) 272-1345. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arun S. Phasge/
Primary Examiner, Art Unit 1724

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